ANALYSIS OF PLAINTIFF'S EXHIBITS AS BEARING ON EFFORTS TO CONTROL BLUE MOLD.

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2	I, 604	U. of Cal. Bulletin, 1902, describing action of blue mold, "one of the common forms of rot producing fungi—probably even better known from its attack upon all manner of substances in the household, such as cooked food, clothing, etc.," pointing out that citrus fruit is especially vulnerable in case of splits and other wounds giving access to the fungus, noting "the common abundance of this fungus in fruit with broken skin," and adding, "It is evident that our preventive measures must lie wholly along one of two lines: Either by preventing the spores from gaining access to the surface of the fruit, or by prevention of the germination of the spores after they are there." Refrigeration, ventilation, wrapping and disinfection recommended.
3	I, 616	Paper from Florida Horticulturist, 1904, discussing Penicillium mold and recommending careful handling and fumigation.
4	I, 620	Paper by Prof. Hume discussing fact of growth of mold in wounds of oranges as emphasizing importance of careful handling to avoid wounds. Other diseases discussed.
5	I, 623-5	Paper read before Riverside Farmers Institute by G. Harold Powell, Pomologist in charge of fruit decay investigation, 1905. Detailed showing of results from careless handling of citrus fruit, with an analysis of the causes of wounds and bruises and suggestions for their elimination; the entire

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		paper avowedly relating to "*an investigation of the methods of handling the citrus fruits in the groves, the packing houses and in transit,* with a view to determining the relations of these methods to the shipping and the keeping quality of the fruit." It is there stated, "*This is not a pathological or citrus disease investigation. It aims, incidentally, to determine the influence of commercial methods on the development of disease well understood, but primarily to determine the general factors which lead to improvement in the handling of a great fruit industry. As it is our aim to study the methods of handling the orange from the time it is picked from the tree, we begin with the clipping of the fruit from the branch.*"
6	I, 640	"The Handling of Fruit for Transportation." Department of Agriculture Bulletin by G. Harold Powell, Pomologist in charge of fruit transportation and storage investigation, 1905. Elaboration of importance of prompt and careful handling, packing and shipping, and reference to advantage of precooling and refrigeration; *the paper turning largely upon the proposition that most of the rot-inducing wounds could be eliminated at a cost of less than one-half cent a box. This bulletin is definitely confined to the subject of "better handling and better transportation facilities"* (R., I, p. 649).

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7	I, 649	Paper of Lloyd S. Tenny, and discussion at meeting of Florida Horticultural Society, 1907 (p. 649). *This was a paper avowedly limited to "the influence of packing methods on the carrying qualities of citrus fruits."* The author had been an associate of Powell in California in studying the causes, *effects and prevention of injuries occasioned by carelessness and the use of improper equipment and implements in picking and packing,* and *the paper was limited to the discussion of these points with reference to the well known facts that cuts and other injuries rendered oranges susceptible to the attack of blue mold.*
8	I, 663	U. S. Dept. of Agriculture, Bulletin No. 123—1908 report of three years investigation in California by G. Harold Powell and assistants bearing on existing methods and improved methods for picking, packing and shipping citrus fruit. Mold and decay represented as largely eliminated under the careful handling practices worked out by the Government as against frequent instances of decay of 25 to 30% and upwards under former practices (R., I, p. 721). This bulky bulletin with its exhaustive treatment of the subject of careful handling has one incidental reference to the use of chemicals. Nowhere in this exhibit or in any other evidence offered by the plaintiffs is there any reference to the principle with which the patent seeks to concern itself, to wit, the impregnating of the oranges or other fruit with the substance required

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under the patent to go into the market with the fruit. Bulletin 123, at page 709, makes casual reference to proposals to disinfect not the fruit itself but the wash water so that the oranges could be washed and scrubbed without the introduction of the living germs otherwise found in the wash water. The comment is made that from preliminary studies such practice did not seem promising or advisable. And the sting of the discussion is found to lie in Powell's contention, maintained stoutly throughout all the years of his work, that careful handling is enough, that it needs no supplementary remedy. He said, "If it were possible to kill the blue mold in the washing tank, it would place a premium on the shiftless management of the groves and on the rough, careless handling of the fruit." This was an announcement of a generally known rule of caution with respect to the use of antiseptics and preservatives in the preparation of food products. This Exhibit No. 8 (Bulletin No. 123) is the summation of the earlier exhibits. The later exhibits relate largely to what was built upon Bulletin No. 123 and went to emphasize the soundness and sufficiency of the careful handling procedure developed under the direction of Powell. In listing the remaining exhibits the symbol ° will be used to indicate that the publication listed is devoted in chief to the support of the careful handling program reviewed in Exhibit No. 8. To this symbol will be added

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		a notation of any fact relevant to the present case.
9	I, 755	Careful Handling, paper read before the Florida State Horticultural Society, 1908, "The lesson then, that I would teach is carefulness that should run, like the red strand in the cordage of the English Navy, through all our operations and relations with our fruit" (p. 763).
10	I, 766 II, 769	U. S. Dept. of Agriculture Circular, 1908, Careful Handling Bulletin on extension of careful handling program to Florida concluding, "The experimental work indicates that what has been accomplished in California may be duplicated in Florida. The decay of oranges is closely connected with rough handling of the fruit. Careful methods result in good keeping quality. Rough and careless work should be expected to cause decay, and the experiments show that this is true. Approved: James Wilson, Secretary of Agriculture" (p. 776).
11	II, 777	Popular article from Review of Reviews, 1909, reviewing Powell's work on careful handling.
12	II, 788	U. S. Dept. of Agriculture Circular, 1909 (R., II, pp. 788, 801, 807); particular reference to careful handling.
13	II, 808	Florida State Horticultural Society proceedings, 1909 (R., II, pp. 808, 809, 816-818).
		In connection with this extended discussion of the importance and adequacy of careful handling, one Florida grower com-

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		mented that in California he had seen permanganated potash used in the wash water "to kill all the germs, but Mr. Powell told me that no chemical could be used that would kill the spores of blue mold" (p. 823).
14	II, 835	Proceedings of the Florida State Horticultural Society, with special reference to careful handling, 1910 (R., II, pp. 835, 836, 838, 841, 848).
15	II, 864	Proceedings of the Florida State Horticultural Society, 1911. This exhibit limited to cultural methods calculated to control two diseases, stem end rot and gummosis. With a brief comment that certain washing experiments tended to indicate that new infection of these diseases did not take place in wash water, to which was added the following comment not related to any other point in the proceedings: "Some of the chemicals we used appeared to increase the amount of blue mold decay, due probably to injury to the rind."
16	II, 880	Citrus Protective League of California Circular, 1911; special reference to careful handling.
17	II, 883	Citrus Protective League of California Circular No. 2, 1911. This circular, signed by G. Harold Powell, strongly emphasizes the sufficiency of careful handling and contains the following warning, "Don't try to disinfect the water for blue mold. This disease cannot be killed by any strength of copper sulphite or permanganate of potash that would not be injurious to the fruit.

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		* * * Don't let up on the campaign for careful handling. It was never needed more than in the present year."
18	II, 888	U. S. Dept. of Agriculture Bulletin, 1911; special reference to careful handling.
19	II, 897	University of Florida Bulletin, 1911; in special reference to careful handling.
20	II, 902	Florida State Horticultural Society Proceedings, 1912 (pp. 902, 910); in special reference to careful handling.
21	II, 922	Correspondence School Instruction Circular of 1912. Special discussion of careful handling.
22	II, 926	Paper read at Washington State Horticultural Convention, 1912. Special reference to careful handling.
23	II, 936	Proceedings of Florida State Horticultural Society, 1913 (pp. 936, 937, 941, 942, 956); special emphasis on careful handling.
24	II, 967	U. S. Dept. of Agriculture Bulletin entitled "Factors Governing the Successful Shipment of Oranges from Florida," being sub-titled, "Report on harvesting, handling, and shipping experiments made on a commercial scale through seven shipping years, showing that decay can be materially lessened by greater care and the avoidance of mechanical injury to the fruit," by ten designated Pomologists of the Office of Horticultural and Pomological Investigations. This bulletin indicates the slip-shod practices of the citrus fruit industry in its earlier days, and the deplorable consequences of careless and unscientific handling

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of fruit. The following quotation is an example:

"Under date of December 2, 1893, the following report is given:

The dealers and handlers throughout the country are worn out with the constant labor of repacking, in the effort to save something out of the ruins of the decay, and to save the fruit from going bodily to the dump. Buyers are afraid to take hold, because they have no assurance of getting an article that will hold together until they can get rid of it.

Out of 19 telegraphic reports, 12 mention fruit showing decay, using such remarks as: 'Both much decayed,' 'Some lots in very bad order,' 'Oranges mostly decayed,' and 'Very rotten.' It will thus be seen that the conditions which are conducive to the occurrence of decay were present in the early days of the industry" (R., II, 972).

The bulletin then discusses, in minutest detail, the state-wide experiments that were made over a period of seven years, ending in 1913, with a large number of commercial shipping tests in working out improvements in picking, handling and packing, and demonstrating the commercial value of these "careful handling" methods.

Many tabulations and graphs are shown to show the comparative results with respect to blue-mold decay as between a "commercial picking and packing" and the so-called "careful picking and packing." This showing is based on more than ninety experi-

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mental shipments made from Florida in 1910-11, and sixty-five shipments in 1911-12, covering fruit from practically every orange-growing district in Florida, representing a great variety "of conditions and form a fair average of the character of the fruit in the State, as well as of the manner in which it was prepared for market under commercial conditions," in packing houses, variously of the best, poorest and average types" (R., II, 1016-1049). The general conclusion drawn is as follows:

"The investigations of the Bureau of Plant Industry have demonstrated, however, that Florida oranges may be transported to market under ventilation with a minimum loss from decay, even during periods of warm and humid weather, if sufficient care is used to preserve the skin of the fruit in an unbroken condition."

The bulletin then sets out twenty-four specific recommendations with respect to picking and packing, preceded by the warning, "that the condition of the fruit after arrival in market depends largely upon the character of the work done in grove and packing house, and that it is possible to so conduct the operations of picking, packing and shipping as to inflict a minimum of mechanical injuries from which decay may develop" (R., II, 1049).

25 II, 1051 Porto Rican Bulletin referring to and emphasizing the work of the U. S. Dept. of Agriculture for the past ten years upon the principles and practices underlying success-

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		ful and careful handling of citrus fruit for the prevention of blue mold decay (R., II, 1051).
26	II, 1054	Florida State Horticultural proceedings for 1914 continuing the discussions of the necessity and value of avoiding mechanical injuries and the various precautions to be taken (R., I, 1063-1064); together with discussions of the advantage of pre-cooling and refrigerating, and the importance of not packing wet or moist fruit. In other words, the plaintiff shows that down to this time the common teaching of the industry is that it is a successful commercial practice to pick, handle and pack citrus fruit in the manner and with the tools, appliances and equipment that have been brought into general use, and to pack it dry and keep it cool in accordance with the teachings of common sense and common knowledge.
27	II, 1075	Bulletin of 1914 from New South Wales discussing the use of antiseptic sprays while the fruit is on the tree (R., I, 1077). With respect to blue mold, this bulletin follows the other publications precisely in suggesting the importance and sufficiency of avoiding injuries through proper handling (R., I, 1075-79).
28	II, 1079	Reprint from Florida Newspaper of 1914 making no reference to blue mold. It describes a modern Florida packing house and states that it is the practice to use some kind of washing powder in the wash water.

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29	II, 1080	Porto Rican publication of 1924 discussing particular diseases other then blue mold which infect the fruit on the trees regardless of injuries. The bulletin discusses in detail a decay forming at the stem end "when the fruit is still attached to the tree" and penetrating to such a depth that "it was not expected, from what had been noticed, that dipping the fruit into a fungicide would give beneficial results, as such disinfection must be very superficial at best and hardly able to penetrate to the point of infection which is apt to be well into the tissue at the stem end. Spores germinating on the surface would be prevented from penetrating the fruit by such treatment" (R., II, 1082).
30	II, 1084	Florida State Horticultural proceedings for 1915 further teaching of the importance and sufficiency of careful handling and reference to the fact that it is customary to use a soaking tank "filled with hot water, containing an alkaline cleansing powder" (R., II, 1086).
31	II, 1093	U. S. Dept. of Agriculture Bulletin of 1915 with further teaching of the importance and sufficiency of careful handling including effective drying after washing (R., II, 1093).
32	II, 1097	U. S. Dept. of Agriculture, 1922, reprint of U. S. Dept. of Agriculture Bulletin of 1915 on "Handling and shipping citrus fruits in the Gulf States." A review of this bulletin will show, convincingly, that plaintiff proved that down to 1922 the industry was still being taught with the greatest em-

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phasis to the advisability of looking to the preventing of injuries through proper handling to prevent attacks of mold. This bulletin stands squarely upon the following proposition:

"Extensive investigations and commercial experience have conclusively demonstrated that citrus fruits can be handled with sufficient care to prevent these injuries and to deliver the fruit on the market in sound condition even under adverse climatic surroundings" (R., II, 1101).

This bulletin continues the former emphasis on cleanliness and ordinary disinfecting practices.

33 II, 1132 Extracts from "An Account of Citrus Fruit Industry (1915) by J. Olior Coit, Prof. of Citri-culture, Univ. of Cal., and Citriculturist of Univ. of Cal. Experiment Station. Practice of disinfection against brown rot by use of bluestone in the wash water; spraying ground under trees with Bordeaux mixture to prevent brown rot fungus from fruiting on the ground.

Blue and green mold decay dismissed with the comment:

"The universal preventive for these decays is careful handling of the fruit in field and packing-house, which if conscientiously enforced, will reduce the losses to a minimum" (R., II, 1134).

Melanose and Stem End Rot discussed as independent causes of decay. Nailhead Rust discussed likewise. Scab or Verrucosis discussed.

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34	II, 1136	Proceedings of California State Fruit Growers' Convention (1916). Extracts offered relate to brown rot of lemons, with no possible bearing on the blue mold issue except as they lay great emphasis on "careful handling" as an essential practice (R., II, 1136, 1141).
35	II, 1145	Extracts from Bailey's Standard Cyclopedia of Horticulture (1917). Article on "Transportation of Horticultural Products." This article is signed by H. J. Ramsey (R., II, 1160). It is substantially a paraphrase of U. S. Dept. of Agriculture Bulletin No. 63 (Ex. 24, R., II, 967, supra), of which H. J. Ramsey was co-author. This 1917 article stands four-square for careful handling, with common sense attention to temperature conditions as a matter of course. The teachings of the article are based on the following proposition: "The care exercised in harvesting and preparing horticultural products for shipment determines, to the greatest degree, its shipping or keeping quality. Extensive investigations conducted on a commercial scale by the Bureau of Plant Industry, United States Department of Agriculture, for a number of years, covering a wide range of fruits and vegetables, have clearly and conclusively demonstrated that decay in transit and after arrival at the market is due very largely to rough methods of handling. The fungous organisms causing decay gain entrance through mechanical abra-

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sions of the skin made in picking, hauling, packing or other handling operations. Every injury or breakage of the cells of the skin offers lodgment for fungous spores which, given proper moisture and temperature conditions, germinate and produce decay. * * *

Nearly all growers and handlers of fruit or vegetables realize that rough handling, resulting in mechanical abrasions of the skin, is more or less responsible for decay occurring in transit. Few, however, have a clear idea of the extent of mechanical injuries made in ordinary commercial handling, nor do they realize fully the importance of the most careful work, or what constitutes proper and careful handling of a perishable product. * * *

Careful handling involves the exercise of thoughtfulness in the manipulation of the fruit from tree to car in order to preserve the skin of the fruit in an unbroken, sound condition. It necessitates the most careful supervision of labor. It means simple and the minimum amount of machinery for washing, drying, sizing or grading, and constant attention to keep it clean and in perfect order. The whole handling problem is an economic one related to systems of both hiring and supervising labor. * * *

Next to care exercised in the physical handling of the fruit, temperature is the most important factor in determining the life-span of the fruit" (R., II, 1150-1-2-3).

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36	II, 1161	Bulletin State Plant Board of Florida (1917). Recommendation of soap solutions as "very good insecticides" and reference to lye, washing soda and borax as water softeners. No reference to blue mold treatment.
37	II, 1164	State Plant Board of Florida (1918). "The Theory and Practice of Sanitary Precautions in Grove and Packing House Operations," by John G. Holton, Asst. General Inspector. This article is a discussion of the many diseases and insect pests that affect Florida oranges and the natural means of control through care, cleanliness and disinfection. Blue mold prevention is discussed in terms of avoidance of injuries, supplemented by thorough cleanliness and disinfection to lessen the chances of inoculation of any unavoidably injured fruit. There is not the remotest sign of desire for or approval of any plan looking toward the treatment of injuries as a substitute for avoiding them. The author teaches by illustration how regular scrubbing of equipment with soap and water may be expected to reduce blue mold losses from an average of two to five per cent. with the likelihood of further reductions by using such powerful antiseptics as formaldehyde, carbolic acid or bichloride in disinfecting field boxes, tanks and other equipment (R., II, 1169).
38	II, 1184	*"Crusade Astir to Improve Methods of Fruit Handling,"* California Citrograph (1920). General Manager F. Harold Powell makes forceful presentation of impor-

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		tance and sufficiency of "careful handling" at mass meeting of several hundred Exchange managers, directors, packing house and field foremen. Reference to deterioration in industry methods since beginning of the war, because of shortage of labor, etc. Some associations still successful; revival of appreciation of need for most careful handling methods called for; "prevention of decay is under human control" and "picking and packing house operations must be organized around careful handling methods" (R., II, 1184-6).
39	II, 1186	Paper by O. F. Barger, U. S. Dept. of Agriculture Pathologist, published in California, Department of Agriculture, Bulletin 1920. Various decay producing diseases discussed. Consensus of authority shown to be that proper handling and ordinary cleanliness practically eliminates blue mold decay (R., II, 1186-1194).
40	II, 1195	California Citrograph (1921). Paper by H. J. Ramsey, field manager California Fruit Growers' Exchange: Unqualified teaching of careful handling, with no reference to any other need—"It has been possible, under the conditions that have existed, to secure almost perfect picking where the work has been carefully and properly supervised."
41	II, 1200	U. S. Dept. of Agriculture circular of 1923 by John R. Winston, Harry R. Fulton and John J. Bowman on Commercial Control of Citrus Stem End Rot, with short foot note on "Blue mold rot" showing that

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		it is distinct from the two types of stem end rot, and adding: "It requires different procedures for control from the stem and rots. Briefly, the fruit must be kept free from bruises and scratches of all kinds and from long continuance of surface moisture—from rain or dew, from washing, or from condensation ('sweating')—and it should be held at low temperatures (40° to 45°)" (R., II, 1201).
42	II, 1215	Western Australia Dept. of Agriculture Leaflet, 1923. Principles of careful handling in avoidance of blue mold as dependent on injuries (R., II, 1215-19).
43	II, 1219	Popular Article, 1924, on "American Fruits." Many diseases discussed. "The method of control (of blue mold) is to prevent wounds or injury to the skin" (R., II, 1221-2).
44	II, 1225	Paper by Harry R. Fulton and John J. Bowman on "Borax Treatment of Citrus Fruits for the Prevention of Blue Mold Rot" (1924). This work followed the publicity given by the Brogdex Company with respect to its alleged novel composition Brogdite to be used for the chemical disinfection of oranges. In November or December, 1923, Barger, a department associate of Fulton and Bowman was observing in company with Brogden, certain tests of the use of this secret composition Brogdite on oranges (R., I, 241-6). He knew nothing of the composition of Brogdite (R., I, 248-9). He was told in effect that Brogdite was a secret formula (R., I, 249, 265). In

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		June, 1924, the California Fruit Growers' Exchange, by circular to its vast number of orange shippers, was giving great publicity to its field investigations of 1923 and 1924 with respect to the efficacy of Brogdex plan of equipping packing houses and treating oranges with its products and methods known as Brogdite and Brogdex. Fulton and Bowman proceeded to make a commonplace series of tests with various well known antiseptics and recommended borax as probably best.
45	II, 1236	Extract from "The Florida Grower," November, 1924. Paper by H. R. Fulton and J. R. Winston reporting on recent laboratory tests with fifty or more chemicals "to find an effective, non-injurious and cheap disinfectant solution for the prevention of blue mold rot of citrus fruits"; borax recommended for the purpose. The paper shows that upon being assigned this problem, these workers simply tried out various well-known antiseptics by applying them as antiseptics and preservatives customarily are applied.
46	II, 1241	Letter of H. R. Fulton dated Oct. 14, 1924, telling of developments during that year with respect to preserving oranges chemically, with particular reference to blue mold and stem end rot, with a recommendation for the use of borax (R., II, 1242). Also further letters and bulletins on same subject Oct., 1924-Dec., 1924 (R., II, 1243-1249).

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47	II, 1250	"The Citrus Industry." Report by W. W. Yothers, an associate entomologist, on an attempt to kill scale insects by use of a hot borax solution, following a report that soaking in a hot borax solution practically prevented blue mold, which Mr. Yothers branded as "a most remarkable and marvelous accomplishment."
48	II, 1251	"The California Citrograph," March, 1925, Paper by Wm. R. Barger of U. S. Dept. of Agriculture giving results from preserving oranges with borax against attacks of mold according to earlier practices referred to with respect to meat and other organic substances (R., II, 1251).
49	II, 1256	Florida State Horticultural Society proceedings, April, 1925, with extended discussion of the proposal to preserve oranges by soaking them in borax (R., II, 1256-1265).
50	II, 1265	Paper on use of borax, Wm. R. Barger and Lon A. Hawkins (1925), showing tests made in 1924 to obtain more exact information as to the value of common disinfecting practices, and as to improvements thereon (R., II, 1265-1274).
51	II, 1275	Article by J. W. Andrews in "The Florida Grower," Oct. 10, 1925, referring to the use of borax and boracic acid for over fifty years as preventives of the development of molds and decay and discussing use of same against blue mold, phomopsis and diplodia rot of oranges.

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52	II, 1281	Extract from "The Cultivation of Citrus Fruits" (1926). Reference to use of borax against the mold decay of oranges, concluding: "Under no conditions, however, can immersion in a fungicidal solution be expected to take the place of careful handling of fruit during picking and packing" (R., II, 1283).
53-59	II, 1284-1305	Seven patents (1925-6) for various chemical treatments of fruits and vegetables, applied for by employees of the U. S. Dept. of Agriculture and dedicated to public use.
60	II, 1307	Letter of Dec. 19, 1924, from E. G. Dezell, General Manager, to the shippers of California Fruit Growers' Exchange suggesting use of borax on strength of old uses of borax as a preservative and recent tests with oranges.
61	II, 1312	Letter on June 20, 1924, Same to same, reporting on tests of the Brogdite and Brogdex systems.
62	II, 1329	Four California Fruit Growers Exchange circulars to all its shippers, dated Dec. 20, 1921, Dec. 21, 1921, Jan. 4, 1924, and April 8, 1924, urging the utmost care to avoid injuring oranges and thus allowing access to blue mold spores. It is there taught that brown rot fungus grows on sound fruit and therefore must be fought with an antiseptic such as Blue Stone or Copper Sulphate,—no degree of careful handling placing the packed orange beyond the danger of Brown Rot (R., II, 1329-1338).

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63	II, 1338	Borax list (R., II, 1338).
64	II, 1338	Borax solution table (R., II, 1338).
65	II, 1340	Chase & Co. 1926 decay table (R., II, 1340).
66	II, 1341	Borax tests.
67	II, 1342	Plaintiff's form of license agreement Sept. 9, 1924, for use of "Brogdite" (borax) composition and method for retardation of blue mold decay and "Brogdex" composition and method (waxing process) for improving the appearance and retarding shrinkage and withering of citrus fruit, in connection with machinery, equipment and supplies to be furnished by plaintiff.
68	II, 1352	Plaintiff's grant of exclusive license and right to Skinner machinery Sales Company covering the "Brogdite" and "Brogdex" systems, June 18, 1926.
69	II, 1362	Sketch by Brogden of defendant's Haines City packing house equipment (R., I, 101).
70	II, 1362	Sketch of Brogden of DeLand equipment (R., I, 102).
71	II, 1362	Sketch by Brogden of typical borax treating system at New Smyrna, Mims and Cocoa houses (R., I, 102).
72	II, 1363	Parrish Brogdite-Brogdex license (R., I, 108).
73	II, 1372	Parrish lease for machinery and equipment.
74	II, 1377	Scientific papers of the Bureau of Standards No. 495 (1924), "A Radiometric Investigation of the Germicidal Action of Ultra-Violet Radiation." Highly technical report of experiments with Bacillus Coli, Staphylococcus Aurens and other bacteria, and no reference to blue mold or other fungi.

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75	II, 1419	Florida Citrus Exchange Bulletin setting out license and lease agreement with Zeltrocide Chemical Corporation for use of processes and appliances under its three patents of 1925-6. No reference to any question in issue in this case (R., II, 1419).
76	II, 1434	
77	II, 1434	
78	II, 1434	
79	II, 1434	
80	II, 1434	Bills for borax (R., II, 1434).
81	II, 1435	Patent for machine for brushing and polishing fruit and other objects (1909) (R., II, 1435).
82	II, 1441	Telegram ordering oranges (R., II, 1441).
82A	II, 1442	Same.
83	II, 1442	Florida State Horticultural Society proceedings 1921 (R., I, 196). Discussion by defendant's witness, Alfred R. Sandlin, emphasizing the importance of proper handling: "With all grades of fruit it is important and necessary that the best care possible in picking and handling the fruit from the trees to and through the packing house into the car be practiced. The once tough and leathery rind seems to be passing to a more sappy and tender condition, and this together with the many different factors that shorten the carrying life of the fruit, has compelled our government and our better thinking people to set to work to better our shipping conditions. The result is better packing houses; better ventilation; better

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		machinery, which is being improved from season to season; and what is probably of as much if not more importance, the pre-cooling plants are beginning to find their place where needed most. In the long warm and damp climate where we grow our fruit we can pack and cool it to that degree which will insure safe shipment under most any and all conditions. * * * If we will set to work to grow a better quality and a higher grade of fruit, using every discretion in the grade and pack, and insist upon a faster schedule and better equipment, cheaper rates and better shipping conditions, we will no doubt push forward and prosper and the industry continue to grow and expand and meet fully the expectations of all the growers who are operating and co-operating economically for the betterment of the conditions of the industry'' (R., II, 1443, 1447).
84	II, 1446	Check for oranges.
84A	II, 1446	Bill for oranges.
85	II, 1447	Translation from French article on ''Insecticides, Fungicides and Weedkillers'' (1913) setting out preservative and antiseptic quality of borax and boric acid; ''It is a weak preservative. To preserve meat it must be steeped in a four per cent. solution'' (R., II, 1447, 1450). This publication simply emphasizes the fact that there is nothing new in the dipping of an article of food into a borax solution to prevent mold and preserve the article.

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86	II, 1450	U. S. Dept. of Agriculture Bulletin of 1910. Goes only to the point that "It is well known that many chemicals, drugs and ordinary household substances possess preservative properties to a greater or less degree depending to some extent on how they are used"; that it is customary to note "the effect of the different agents in varying degrees of concentration"; and that usually the results are necessarily confined to the bare facts of retardation or inhibition of development" in the case of bacteria, "as they are too minute to note structural changes other than those of form." This publication suggests nothing except the commonplaceness of the application of an antiseptic to prevent the growth of mold (R., II, 1450-1).
87		Patent Office File—not printed.

DEFENDANT'S EXHIBITS

Exhibit Number	RELEVANT MATTER
D 1	Tabulation of defendant's citrus shipments 1924-5 with reference to decay (R., II, 1453).
D 2	Same 1925-6 (R., II, 1456)..
D 3	Four letters from defendant's Florida manager to its packing house managers (Oct.-Dec., 1924) giving out to Government's advices concerning use of borax as a preservative (R., II, 1458-61).
D 4.	Four similar letters, Sept.-Nov., 1926, instructing any packing house manager using borax to use water at natural temperature and not over 2½% strength (Sept.) and 1¾% (Oct., Nov.) (R., II, 1462-4).
D 5	Letter from E. M. Brogden to defendant's vice president, A. B. Michael, setting out merits of Brogdex and saying: "Our advertising agency is now busy with copy with a view to creating a big noise up North with the buyers and dealers,—it should appeal or be more interesting to them even than to the growers because it is the buyers and dealers who suffer most on account of fruit shrinking, shriveling, rotting, etc., and we are going to tell them what a 'bear-cat' Brogdex is and hope to be able to make it strong enough with verbal photographic and samples so that they will always look for the Brogdex sign on the box first and then for your blue gander next. We will turn loose up North in about 3 weeks, depending on how fruit gets to moving, and hope to make the demand for Brogdex fruit greater than the supply, even if we got half the houses in the state on the Brogdex band wagon.

Exhibit Number	RELEVANT MATTER
	With best wishes and hoping to get about all the American houses on the East Coast in line in the next few days, we are," (R., II, 1465-69).
D 6	Articles of incorporation, "Antiseptic Fruit and Egg Packing Company" (1900), formed for the purpose of "the buying of eggs, fruits and other perishable articles of food, preparing them by a new process discovered by S. Bishop, and then to place the above named foodstuffs on the market for sale. Also for acquiring by purchase or otherwise such real and personal estate as may be necessary to carry on the above described business or undertaking" (R., II, 1470).
D 7	Simeon Bishop patent (1900) covering the boracic acid treatment of "fruit, vegetables and eggs, and the like as articles of food" to prevent rapid decay and deterioration, the method being an antiseptic both in a solution of boracic acid, followed by drying and then dipping in a gelatine solution to exclude the air and add to the appearance of the article. Wrapping in tissue paper impregnated with a solution of boracic acid is further recommended (R., II, 1473).
D 8	Chart of defendant's shelf tests to determine desirable strength of solution (R., I, 203; R., II, 1474).
D 9	Record of certain U. S. Dept. of Agriculture tests of borax with oranges conducted by H. C. Gore, and W. M. Scott, Dec. 19, 1904-Jan. 9, 1905, as certified by the Secretary at defendant's request for use at the trial of this case (R., I, 227; R., II, 1475).

Exhibit Number	RELEVANT MATTER
D 10	U. S. Dept. of Agriculture Circular No. 237 issued August, 1922, showing extended study of preservative value of boric acid with respect to various types of Penicillium and other molds (R., II, 1480, 1485) with the following conclusion: "Clearly, then, the boric-acid canning powder in question has a selective effect on molds also, both in reducing the number of species which will germinate and in delaying or restricting the development of others, but it will not entirely eliminate spoilage due to certain common species of mold" (R., II, 1485). This work was done in preparing the Government's case against the sale of "Mrs. Price's Canning Compound" which was 95% borax or boric acid and 5% common salt (R., I, 272). In Price vs. Illinois, 238 U. S., 446 (1915), a statute prohibiting the sale of a food preservative containing boric acid was upheld.
D 11	U. S. Dept. of Agriculture Bulletin 109 (1914) showing complaints of cigar manufacturers concerning growth of blue mold and other mold on cigars; same traced to paste used in fastening the wrappers, and recommendation made to sterilize with nearly saturated (5%) boric acid solution (R., II, 1495). This plan reported in successful use "for some years in the factory in which the complaints originated, and when the writer was last in communication with those in charge the boric-acid treatment was in use as a routine practice and only in rare instances were molds found troublesome" (R., II, 1504).

Exhibit Number	RELEVANT MATTER
D 12	Extract from Report of Commissioner of Agriculture for 1878 discussing "Borax as a Preservative of Butter": "The antiseptic virtues of borax being well known, as well as the experiments to preserve meat and other edibles by its aid, it occurred that it might be substituted in butter in place of common salt. On trial it was found not to change in the least the flavor of the butter, and, indeed preserved it admirably" (R., II, 1505). Discussion of contention "that borax frequently taken, even in very small quantities, was injurious, and ought not to be used even for the preservation of meats, etc." (R., II, 1505).
D 13	French paper (1883) recommending borax for mold of grape leaves.
D 14	Studies reported 1909 in Proceedings of Indiana Academy of Science, "The Effect of Preservatives on the Development of Penicillium," by Katherine Golden Britting. These were microscopic studies to ascertain the precise physiological effect of borax and other common preservatives on molds. "The common blue mold apparently omniverous in habit" was used and the following conclusion stated: "The preservatives are those which have been used in foods, and used in approximately the same amounts. The results show that they have a retarding effect on the development of the mold, even when in small amounts, and that most of them become inhibitive when the amounts are increased, the increase not exceeding the amounts which have been used in foods" (R., II, 1509).

Exhibit Number	RELEVANT MATTER
D 15	"Effect of Boracic Acid and Several Other Compounds upon the Development of Penicillium Glaucum and Aspergillus Niger." Scientific study by two Dutch chemists, with the conclusion that "boric acid even in extremely low concentration (0.06 per cent.) has a distinctly inhibiting effect upon the development of Penicillium Glaucum (1912)" (R., II, 1516, 1521).
D 16	Further extracts from French publication of 1913 from which Plaintiff's Exhibit No. 85 (supra) was taken. Preservative value and uses of borax referred to (R., II, 1521).
D 17	K. G. Bitting, Bacteriologist (1920), report and tables showing distinct retardation of development of Penicillium by the use of even small amounts of boric acid (R., II, 1525, 1534).
D 18	Report of Comptes-Rendus of French Academy of Science 1892, showing anti-germinating action of borax (altogether comparable with that of boric acid) and predicting that boric acid even in the very weak solutions should completely inhibit the growth of the lower fungi.
D 19-42	Prior patent (R., II, 1538-1598).
D 43	Preservatives use of boric acid set out in Horticulturist Year Book, 1898 (R., II, 1611).
D 44	Letter from L. Niles witness for plaintiff to W. E. Connor, grove owner (R., II, 1613).
D 45	Letter same to same (R., II, 1614).

IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE EASTERN DISTRICT OF PENNSYLVANIA.

SITTING IN EQUITY.

BROGDEX COMPANY vs. CALIFORNIA FRUIT GROWERS EXCHANGE.	September Term 1928 No. 4745 Injunction Bill

Sur Motion for Preliminary Injunction.

DICKINSON, J.:

This cause is out of the usual. It has been adjudged that the plaintiff is the owner of a valid patent with the right to injunctive process against infringement. The present defendant is not a party to the cause thus adjudicated, and in that sense is not concluded thereby. None the less by this adjudication the plaintiff has brought itself within the right to ask for a preliminary injunction against infringers, although not parties to the cause decided. The plaintiff thus has what may be called a prima facie right to an injunction ad interim. The issuance of such a right is nevertheless always within the sound discretion of the Chancellor, and may be granted or withheld as the equities growing out of the circumstances of the particular case may dictate. The defendant makes an appeal of more than ordinary strength to any one whose duty it is to pass upon any claim of right which it may present for it is an organization which stands between growers of the fruits of the soil, and the ultimate consumer saving the latter

from the payment of a price three times as large as he should pay, and helping the former to get something more than one-third of the fair price of his product. Translated into the concrete, this means that the defendant is an association of fruit growers or packers organized to put their fruit upon the market. The association is organized as a corporation under the laws of the State of California and belongs to that class of corporations which in Pennsylvania are known as corporations not for profit. The patent of the plaintiff relates to a process to which citrus fruits, or at least lemons, are subjected in preparation for shipment and marketing. This process is usually applied by the packers who thereafter send the fruit which has been subjected to this process to the defendant association which thereafter takes care of its marketing. The defendant can thus be truthfully said not to be a seller on its own account but for the packers or growers to whom the fruit really belongs. The organization of those interested in fruit culture thus includes an unlimited number of fruit growers, a number approaching 200 of fruit packers and 23 district organizations, to those interests the activities of the defendant association are devoted.

The answer of the defendant to the prayer for a preliminary injunction includes the urging of a denial of the validity of the patent in the added light which the present defendant hopes to be able to shed upon plaintiff's claim to letters patent; an averment that the defendant was now abstaining from any and all acts which might be averred to be infringements of the letters patent, and the further assurance now given to the Court that no act would be committed which could be construed to be an infringement pending the determination of the rights of the parties in the present cause.

In this view of the fact situation before us why should an injunction issue? The plaintiff makes an altogether

different presentation of the fact situation. This is that the validity of the letters patent held by the plaintiff has been solemnly adjudicated; that since the issuance of the letters patent, and indeed since the adjudication of their validity the defendant has committed acts which plainly indicate infringement; that defendant has such relation with growers and packers as to be under a contractual obligation to market fruit which has been prepared for market in violation of the plaintiff's rights; that the defendant has not only been guilty of admitted infringement in the past but has counseled and encouraged as recently as in a bulletin issued in the present month the continuance of acts of infringement by the packers whose fruit it sells, and finally that the defendant is in no position, even if so disposed, to give any assurance that further acts of infringement will not be committed. The plaintiff in consequence protests that it should not be driven to the very precarious, expensive and delaying experiment of finding a vindication of its adjudged rights by pursuing numberless growers, nearly 200 different houses or even 23 district branches of defendants' activities, when all of them can be reached once and for all through an injunction against the defendant, which is the organization by the help of which all commercially operate.

We are unable to bring ourselves to an acceptance of the suggestion that the defendant may sell the subject of this product patent through the expedient of organizing the sellers into an association which thus claims to sell not for itself but for its constituent members, and leave the patentee to a pursuit of the latter.

There is force in the comment made by the plaintiff that if escape from the consequence of infringement can be thus afforded, all that infringers need do is to appoint a common sales agent, trusting that the number of the principals will provide them with a practical protection

against injunctions. Whether or not an injunction should issue thus becomes a question of some difficulty to decide. As has often been remarked, every worthwhile litigation presents two phases or faces. One directs attention to what may be called the legal rights of the parties; the other looks in the direction of the practical consequences which result from a granting or withholding of the asked for relief.

The respective situations in which the parties will be placed by an allowance or refusal of the present motion may be with profit contrasted. The product patent relates to a thing which is brought into existence by the application of the patented process. This turns upon the use of borax and its kin in the treatment of the fruit when being prepared for market. The question of how much borax is evidence of the pirating of the plaintiff's process cannot be determined from the claims of the patent in suit. The defendant asserts that it is prepared to prove that there is taken up in the growth of the fruit ingredients in the soil or in the water with which irrigated or from insecticide sprays in use a quantity of borax which may not only be detected and found in the rind of the natural fruit but exceeding in quantity the minimum percentage of borax prescribed by the patented process; that the mere presence of borax is in consequence no evidence of infringement of this patent and the claims of the patent are thus brought within the condemnation voiced in Holland Co. vs. Perkins Company, 277 U. S., 245.

Another feature of the present fact situation is that from the nature of the association defendant it may be assumed that the fruit growers by contract, or at least in practice, make all their sales of fruits through the defendant association. We are far from an acceptance of the doctrine that the seller of a patented thing may escape the consequences of infringement by entering

into a contract to infringe, but it is nevertheless a feature of the present situation that if an injunction issues, the defendant must take it upon itself to decide whether any shipment of fruit is of the patented product. If it is it must be rejected or the risks of contempt finding incurred. Even if it is not, the defendant must incur the risk of an adverse finding and if the shipment is rejected, the grower or packer must find a purchaser elsewhere. The defendant will thus in more than a figurative sense be doing business with a rope around its neck, and if it takes the path of safety by rejecting a shipment, the grower or packer must make a sale for which he is unprepared, although the sale be in fact not an infringement. The product is perishable and must be promptly marketed and will not await the report of a chemical analysis. The plaintiff essays to answer this by citing an abstract from the Bulletin of the Department of Agriculture (put into the record by the defendant) from which it would appear that the defendant makes a daily inspection of all Packing Houses and thus knows the process there employed. An injunction, if issued, will last only until final decree. We have the assurance of the defendant that the patented process of preparing fruit for the market will not be employed in fruit sold by them. If it is able to make of this assurance a fact the plaintiff will get all it could get through an injunction; if the assurance fails full compensation in damages may be recovered. After a full hearing through which all the facts will be developed, the Court can deal in its final decree with the situation then presented in all its aspects. To attempt to deal with it by anticipation presents the danger of doing more harm to the business of the growers and packers (who are not parties to this suit) as well as that of the defendant than would be compensated by the injunction serving any lawful purpose of the plaintiff.

Without prolonging the discussion, we state the conclusions we have reached.

1. The question of validity and infringement we think are, for the purposes of this motion, foreclosed by the ruling of the Circuit Court of Appeals in its finding in the American Fruit Growers case, 35 Fed. Rep. (2d), 106, and that the plaintiff has prima facie a right to a preliminary injunction.

2. The disclosures of the moving and answering affidavits however disclose a present fact situation which we think can be best met by withholding until final hearing the determination of the kind of decree to be entered.

A formal interlocutory decree to this effect may be submitted.



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Supreme Court of the United States

OCTOBER TERM, 1930.

NO. 48.

AMERICAN FRUIT GROWERS, INC.,
Petitioner,

v.

BROGDEX COMPANY, Respondent.

REPLY BRIEF FOR PETITIONER.

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Supreme Court of the United States

OCTOBER TERM, 1930.

NO. 48.

AMERICAN FRUIT GROWERS, INC.,
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BROGDEX COMPANY, Respondent.

REPLY BRIEF FOR PETITIONER.

The purpose of a reply brief should be to bring back to the forefront the fundamental questions presented for review, which questions so often lose their importance in the too extended discussion of collateral issues or are deliberately avoided by the respondent in his efforts to secure an affirmance of an erroneous ruling supported only by inferences from facts not proven.

In the case at bar the defendant asserts that the patent in suit is invalid because anticipated by prior patents and publications and by prior uses of which evidence was submitted at the trial. The primary evidence to be considered in determining whether or not that defense is sound are the disclosures of the prior patents and publications, the testimony of the witnesses with respect to the established practices of using borax and boracic acid for the preservation of food stuffs and the testimony of the prior users with respect to their own particular practices.

The respondent's brief contains but little reference to this primary question of anticipation and to this

primary evidence upon which the defense of anticipation rests. It is instead directed almost solely to a discussion of the collateral issue of "commercial success" following an alleged "long-felt want".

Validity the Principal Issue.

In our main brief, p. 3, under the title "Prime Question for Review", we asserted that the monopoly conferred in the patent in suit was a broad monopoly giving the plaintiff the exclusive right to immerse fresh fruits and vegetables of every description in a solution containing a substantial amount of borax or boric acid for the purpose of preserving them against decay. The plaintiff makes no attempt to show that its process—that is the acts performed in carrying out the procedure described in the patent involved anything more than this. The plaintiff's argument, like its patent, seeks to conceal the breadth of the monopoly by long and verbose dissertations on the nature of the article immersed in the borax, the possible presence of minute and invisible scratches in its rind, as well as on the results attendant upon this simple step of soaking the article to be preserved in the preservative solution, such as the obvious absorption of the solution into the tissues of the rind,—together with much speculation on the effect of the borax on the tissue and the infecting fungus. But nowhere in its entire brief does plaintiff contend that there is, or can be, any process involving the immersion of fresh fruits or vegetables in a borax or boric acid solution for the purpose of preserving them against decay which would not constitute an infringement of this patent.

The plaintiff states that this definition of the patented process "is incomplete, erroneous and highly misleading," (Plff's. brief, p. 31) but nowhere in its

whole brief does it offer any other definition of its process or point out wherein defendant's definition is erroneous. Nowhere in its brief does plaintiff assert that its process contains any other essential step or point out any specific limitation *in the procedure to be followed.*

It is defendant's contention that this procedure is old in the art—that it is completely and fully disclosed in numerous prior patents with specific reference to fresh fruits and vegetables, even citrus fruit; and that unless plaintiff can show positively some *essential step* in the *procedure* described and claimed in the patent in suit which is *not* disclosed in the prior art, the process claims of the patent must be held invalid even though the commercial success following the introduction of the process were ten times what has been shown.

We have reviewed these prior patents in our main brief (pp. 26-34). The disclosures of these patents must be taken at their face value. The plaintiff offered no evidence to show that the procedure disclosed in these patents of dipping the fruit or other article to be preserved in the solution specified would not make it resistant to decay in precisely the same way that the defendant's procedure is alleged to preserve the defendant's fruit. Instead plaintiff asserts that its patented process involves some intangible *something* other than or in addition to the simple procedure of dipping the article to be preserved in a solution of borax or boric acid of a strength such as prescribed in the prior art, and then asserts that its position is supported by the decisions of the Courts that prior art patents and publications are limited to what is described "within their four corners", and may not be "reconstructed by extensive evidence" to embrace matter not within their scope. With this rule of law, the petitioner is in full

accord, and it is petitioner's position that the patents to Gahn (R. II. p. 1456) to Bishop (R. II. p. 1473) to Fagersten (R. II. p. 1552) to Hauff (R. II. p. 1554) to De Sturler (R. II. p. 1566) and others fully disclose within their four corners the process of preserving fruits and vegetables by dipping them in a sufficiently concentrated solution of borax or boracic acid and that there *is no limitation which can be read into the process* of the patent in suit to make it anything different, or more specific.

It is also petitioner's contention that the findings of fact of the lower Courts with respect to the disclosures of the prior art preclude as a matter of law, a holding that the process claims of the patent in suit are valid.

> "That borax and boric acid have long been known to possess antiseptic properties and long been used as preservatives of animal and vegetable matter is here established beyond question. They were so used both dry and in solution. The solutions were both hot and cold. The use of a hot solution of boric acid or its salts to prevent the growth of fungi or mold upon cured meats by immersing or dipping them into the solution was disclosed as early as 1879. As early as 1888 boric acid and its salts were used in packing material such as sawdust, chaff and shavings for the preservation of 'all kinds of fresh fruits during storage or their transportation to near or distant markets.' It was even found that many species of penicillium molds were more or less affected by boric acid and its salts." (Opinion Dist. Ct. R. I. pp. 16, 17).

With the process of preserving fruits, vegetables and other food stuffs by immersing or dipping in boric or boric acid solution thus unquestionably in the public

domain there was nothing left for plaintiff to patent even assuming that the patentees were the first to suggest the application of that old process in the commercial packing of citrus fruit, and even further assuming that when so applied all the advantages claimed by plaintiff are in fact obtained.

As we will point out later in this brief, the respondent's brief fails utterly to point to a single line of evidence supporting its contention that the art was continuously engaged for twenty years preceding the patent in suit in a fruitless search for the remedy proposed by the patent, but even assuming that such was the fact, the validity of the patent in suit cannot be sustained, because the process of the patent in suit is *an old process.* The most that the patentees by any possibility could claim is that they discovered that the *old* process of preserving food stuffs by dipping them in borax solution possessed unusual commercial advantages when applied to citrus fruit. From an unenlightened standpoint there might be cause for wonder that the commercial packer of citrus fruit did not long ago adopt this process; but even assuming that the failure of the art to sooner adopt the process is totally without explanation, the patent is nevertheless invalid because the discovery of an unexpected *value* in *an old process* is not invention within the meaning of the patent law.

The novelty and invention required by the Statute must be in *the process itself* and not in its field of use. The original discoverer of the process is entitled to *all* the uses to which it may be put and when the process has passed into the public domain the public is equally entitled to all the beneficial uses of the discovery.

The article claims are equally without validity. The orange with a modicum of borax in its rind is the inevitable result of subjecting the orange to the borax